

Exhibit J

Use of Modern Finance Theory in Securities Fraud Cases Involving Actively Traded Securities

By DANIEL R. FISCHEL*

Determining whether investors suffered any injury as a result of an alleged misrepresentation or nondisclosure and, if so, the extent of such injury, is a recurrent problem in securities fraud cases under rule 10b-5.¹ Consider the situation where a firm, say a chemical company, reported in a public filing in 1975 that it would have to spend \$100 million to comply with environmental regulations over the next decade. At the time the statement was made, the firm's stock was selling at 20. Three years later, in 1978, the firm in another public filing revises its cost estimate and now states that it expects to spend \$1 billion. By the end of 1979, the stock price has dropped to 15.

At this time, a plaintiff files a class action lawsuit on behalf of all shareholders who purchased the chemical firm's stock between 1975 and 1979, alleging that the firm knew that it would have to spend \$1 billion at the time of its initial statement in 1975. Plaintiff further alleges that had the truthful information been disclosed in 1975, the firm's stock price would have immediately fallen to 15, thereby preventing all purchasers after this date from suffering an economic loss. After reciting the above allegations, the complaint prays for damages in the amount of the aggregate economic loss suffered by members of the class. How should a court determine the merits of plaintiff's claims?

The conventional approach has been to analyze whether the materiality, reliance, causation, and damages requirements of rule 10b-5 have been met.² Numerous conceptual problems and unanswered questions exist, however, with this conventional approach. For example, the failure to disclose expected costs of \$900 million (assuming the truth of the allegations) would appear to

*is a member of the Illinois bar and teaches at Northwestern University School of Law and is a visiting professor of law at the University of Chicago. The author would like to thank Frank H. Easterbrook and Richard A. Posner for their helpful comments and Andrew Johnston, Northwestern 1982, for his invaluable assistance. Some of the ideas in this article were developed while the author served as consultant in litigation.

Editor's note: David S. Ruder of the Illinois and Wisconsin bars, Robert L. Berner, Jr., of the Illinois bar, and Alan R. Bromberg of the Texas bar served as reviewers for this article.

1. 17 C.F.R. § 240.10b-5 (1980), enacted pursuant to § 10(b) of the Securities Exchange Act of 1934, 15 U.S.C. § 78(b) (1976). Although it is clear that Congress did not intend for a private right of action to exist under § 10(b), and a private remedy would not be implied under current Supreme Court doctrine, Fischel, *Secondary Liability Under Section 10(b) of the Securities Act of 1934*, 69 Cal. L. Rev. 80 (1981), it is now assumed that such a private remedy is available.

2. The scienter and purchaser-seller requirements also would have to be satisfied. These requirements are not discussed herein.

2 • The Business Lawyer; Vol. 38, November 1982

be highly significant, thus satisfying the materiality requirement. But what if information concerning compliance costs, even if intentionally concealed by the defendant, was available from other sources? And what if plaintiff or other members of the class never read, or were even aware of, the public filing in 1975? Can such plaintiffs be deemed to have satisfied the reliance requirement? Causation and damages also present difficult issues. The fall in the chemical firm's stock price suggests that investors were injured by the nondisclosure. But what if during the time the price of the defendant's stock was falling 25% (20 to 15), the price of other chemical company stocks fell 33%? What if the price of other chemical company stocks did not fall during the relevant time period, but the defendant chemical company was the victim of a long and crippling strike? All of these possibilities directly affect the merits of plaintiff's claims.

My purpose here is to provide a coherent framework for analyzing the above issues. In part I, I critically analyze the model of the investment-purchase decision traditionally used by the Securities and Exchange Commission and the courts. Part II applies this critique to the requirements for establishing a cause of action under rule 10b-5. The recent cases adopting a "fraud on the market" theory are discussed in part III. These cases, I argue, form the basis for rejection of the traditional method of determining injury and damages in open-market trading cases in favor of a more realistic economic approach. Part IV, generalizing from the fraud on the market theory cases, proposes a unified approach for computing injury and damages in open-market trading cases where the only relevant inquiry is to what extent the alleged fraudulent conduct artificially inflated or deflated the market price of affected securities. Finally, part V discusses how the tools of financial economics can be utilized to test empirically the effect of an event on the market price of a security.³

I. DIFFERENT MODELS OF THE INVESTMENT DECISION

A. The Traditional Model of the Investment Decision

The prevalent philosophy of the securities laws is one of full disclosure of all possibly relevant information to individual investors. The Securities Act of 1933 mandates disclosure in the form of a registration statement when new stock is being issued, while the Securities and Exchange Act of 1934 requires periodic reporting and the filing of documents with the commission in certain factual situations, such as tender offers and proxy statements. Underlying this system of mandatory disclosure is a model of the investment decision in which

3. I do not address here many basic economic questions, such as whether private or public enforcement of securities fraud is optimal, whether strict liability, recklessness, or negligence is the most efficient rule in securities fraud cases, or in what situations punitive, consequential, rescissory, or other types of damages should be available. I also do not discuss injury and damages in face to face transactions or in situations involving insider trading. All of these issues await definitive treatment.

Modern Finance Theory in Securities Fraud Cases • 3

all investors carefully analyze financial and other relevant information about a particular firm before making an investment decision.⁴ Investors, under this model, are economic actors who desire as much information as possible so that they can make an informed decision. The goal of regulation, therefore, is to ensure that all relevant information is equally available to everyone entering the investment markets. Thus the securities laws and SEC regulations mandate the continuous disclosure of information so that relevant information is equally available to all. As one former commissioner has stated, the ideal situation would be for an investor anywhere in the country to be able to push a button and have all the documents on file with the SEC regarding a certain company appear on a screen in his office.⁵ Moreover, to ensure that investors will not be misled or confused, the SEC requires that disclosures be simplified and restricts the dissemination of certain types of information that are difficult for the ordinary investor to analyze.

Proponents of the traditional model of the investment decision recognize that regulation may not perfectly achieve its objectives. Imperfections may exist because purchasers of securities sold in a public offering might not get a copy of the prospectus,⁶ because the volume of information to be digested is too great,⁷ or possibly because prospectuses do not contain the information that investors really want.⁸ These imperfections, however, are viewed as flaws in an otherwise sound system that can be corrected by more and better disclosure requirements. If these improvements are made, investors will be able to digest and analyze the relevant information and make informed investment decisions.

B. The Market Model of the Investment Decision

The crucial assumption of the traditional model is that if disclosure of information is made sufficiently meaningful and accessible, investors will rely on it in making investment decisions. The typical response to the casual empirical observation that most investors do not scrutinize the information in required disclosures (or other sources) is that the information is not sufficiently meaningful or accessible.

The fundamental defect of the traditional model is its assumption that the rational course for investors is to analyze carefully all publicly available

4. For representative critiques of the model of the investment decision used by the Securities and Exchange Commission, see Kripke, *The Myth of the Informed Layman*, 28 Bus. Law. 631 (1973); Note, *The Efficient Capital Market Hypothesis, Economic Theory and the Regulation of the Securities Industry*, 29 Stan. L. Rev. 1031 (1977).

5. Wheat, *The Philosophy and Policies of the SEC's Disclosure Policy Study*, 1 Sec. Reg. Inst. 4, 7 (1970).

6. Sowards, *The Wheat Report and Reform of Federal Securities Regulation*, 23 Vand. L. Rev. 495, 499-500 (1970).

7. Cohen, *Truth in Securities Revisited*, 79 Harv. L. Rev. 1340, 1375 (1966).

8. Mann, *Prospectuses: Unreadable or Just Unread—A Proposal to Reexamine Policies Against Permitting Projections*, 40 Geo. Wash. L. Rev. 222, 223 (1971).

information before making an investment decision. What is to be gained by this process? This type of analysis of available data is profitable only if the investor can identify undervalued or overvalued securities better than others do. In an efficient capital market, such as American stock markets,⁹ however, the market price of a firm's stock will reflect all available information about the firm's prospects. Because the market price itself transmits all available information, investors have no incentive to study other available data.

The assertion that securities markets transmit all relevant information may appear to be belied by the constant attempt of securities analysts, institutional investors, and other market professionals to locate mispriced securities. It is not. Markets may be analyzed as having two classes of participants.¹⁰ One class will have a comparative advantage in obtaining and interpreting relevant information. Because of this comparative advantage, actors in this class have an incentive to invest in gathering and analyzing information and to take actions to affect the market price. The other class, however, lacking a comparative advantage, has no incentive to invest in processing information because it cannot profit thereby. The first group will earn a superior return commensurate with their greater investment and skill.

Things are much the same in the securities markets. Various market professionals have an advantage in predicting future states and thus have an incentive to secure information until a marginal dollar invested in processing information equals the profits to be made from trading based on superior forecasting. The other class of investors, with no advantage in predicting future states, has no incentive to invest in information gathering; these investors would be wasting their money by doing so. Their best course is to

9. An efficient capital market is one in which the price of stock at a given time is the best estimate of what the price will be in the future. The literature on efficient capital market theory and its applications is massive and growing. See generally E. Fama, *Foundations of Finance* at 133-168 (1976); J. Lorie & M. Hamilton, *The Stock Market: Theories and Evidence* at 70-98 (1973); Heller, *Chiarella*, *SEC Rule 14e-3*, and *Dirks: Fairness versus Economic Theory*, 37 *Bus. Law.* 517 (1982); Easterbrook & Fischel, *The Proper Role of a Target's Management in Responding to a Tender Offer*, 94 *Harv. L. Rev.* 1161, 1165-68 (1981); Fischel, *The Law and Economics of Dividend Policy*, 67 *Va. L. Rev.* 699 (1981); Fischel, *Efficient Capital Market Theory, The Market for Corporate Control, and the Regulation of Cash Tender Offers*, 57 *Tex. L. Rev.* 1 (1978); Fama, *Efficient Capital Markets: A Review of Theory and Empirical Work*, 25 *J. Fin.* 383 (1970); Jensen, *Capital Markets: Theory and Evidence*, 3 *Bell J. Econ. & Mgmt. Sci.* 357 (1972); Note, *The Efficient Capital Market Hypothesis, Economic Theory and the Regulation of the Securities Industry*, 29 *Stan. L. Rev.* 1031, 1034-57 (1977). The theory is also gaining increasing acceptance in the courts. See, e.g., *Seaboard World Airlines v. Tiger Int'l*, 600 F.2d 355, 362 (2d Cir. 1979); *In re LTV Securities Litigation*, 88 F.R.D. 134 (N.D. Tex. 1980). Cf. *Mills v. Electric Auto-Lite Co.*, 552 F.2d 1239, 1247 (7th Cir.), cert. denied, 434 U.S. 922 (1977).

10. Stiglitz, *On the Impossibility of Informationally Efficient Markets*, 70 *Am. Econ. Rev.* 393 (1980). See also Easterbrook & Fischel, *supra* note 9, at 1166; Kitch, *The Law and Economics of Rights in Valuable Information*, 9 *J. Legal Stud.* 683, 716-17 (1980).

Modern Finance Theory in Securities Fraud Cases • 5

accept the market price as given.¹¹ Because all publicly available information is embedded in stock prices, investors who accept the market price are fully protected. They are no better off with more disclosure nor worse off with less disclosure.¹²

This is not to suggest, however, that investors who accept the market price will never be misled. There is no guarantee that the price of a firm's stock will incorporate only accurate information. If relevant information is withheld from the market, or if incorrect information is disseminated, the price of stock will be mispriced, causing some investors to be injured. To illustrate with an obvious example, if stock is trading at 10 at a time when it would be trading at 5 if negative information about the firm were disclosed, then all purchasers who bought at 10 but could only sell at 5 after the information became known suffered an injury.

The traditional model and the market model of the investment decision have radically different implications. Under the traditional model, the optimal situation is one where all investors have equal access to all relevant information. Investors who lack equal access but make investment decisions nonetheless are worse off as a result. Under the market model, however, it is irrelevant whether investors have equal access—or, for that matter, any access—to information. The only relevant inquiry is whether the price of a security was artificially high or low at the time of purchase or sale.

II. SECURITIES FRAUD CASES UNDER RULE 10B-5

Because most securities fraud litigation is brought under rule 10b-5, an implied remedy, courts have broad discretion in formulating the requirements for recovery. In this section, I analyze some of the elements of a cause of action under the rule and demonstrate how the analysis differs, depending on whether the traditional or the market model of the investment decision is employed.

A. Materiality

An investor must establish that the information alleged to have been wrongfully withheld or falsely disseminated was material to recover under rule 10b-5.¹³ Under the current test, information is material “if there is a substantial likelihood that a reasonable shareholder would consider it important” in making the investment decision.¹⁴ This standard, however, provides

11. The market will be efficient if the first class has access to sufficient capital to move the price of the stock from an incorrect price to the correct one. Kitch, *supra* note 10, at 717.

12. Fischel, *The Law and Economics of Dividend Policy*, 67 Va. L. Rev. 699, 719 (1981).

13. SEC v. Texas Gulf Sulphur Co., 401 F.2d 833 (2d Cir. 1968) (en banc), *cert. denied*, 394 U.S. 976 (1969). The concept of materiality is also central to the mandatory disclosure system. 17 C.F.R. § 240.12b-2(j) (1980) (defining materiality in situations where only material information must be disclosed).

14. TSC Industries v. Northway, Inc., 426 U.S. 438 (1976).

6 • The Business Lawyer; Vol. 38, November 1982

little guidance for determining whether particular pieces of information are material or not. As one commentator has stated, "Verbal formulations are fine but it's the application that's the problem."¹⁵

The problem is insoluble under the traditional model. The fact finder must decide whether an objective investor would have considered the information important or significant when making an investment decision. Apart from an "I know it when I see it" test, the traditional model contains no tools for resolving the materiality problem.¹⁶ Not surprisingly, courts have expressed considerable frustration with the elusiveness of the materiality concept.¹⁷

The primary danger caused by this lack of precision is that a particular piece of information may appear to be important to investors when in fact it is not.¹⁸ This could be true because the information is stale (previously available and therefore embedded in the market price) or because the information was not credible and was therefore disregarded by the market.¹⁹ In either case, the

15. Kripke, *Rule 10b-5 Liability and "Material Facts,"* 46 N.Y.U. L. Rev. 1061, 1068 (1971).

16. This difficulty was recognized by the court in *Escott v. Barchris Construction Co.*, 283 F. Supp. 643 (S.D.N.Y. 1968). After concluding that a corporation had overstated earnings per share and current assets while understating current liabilities, the court had to decide whether the materiality requirement was met. The court's analysis indicates the "I know it when I see it" aspect of materiality:

Since no one knows what moves or does not move the mythical "average prudent investor," it comes down to a question of judgment, to be exercised by the trier of the fact as best he can in the light of all the circumstances. It is my best judgment that the average prudent investor would not have cared about these errors in the 1960 sales and earnings figures, regrettable though they may be. I therefore find that they were not material

Id. at 682.

17. See, e.g., *SEC v. Bausch & Lomb, Inc.*, 565 F.2d 8, 10 (2d Cir. 1977) (describing the materiality requirement as "unpredictable and elusive").

18. The case of *Lynch v. Vickers Energy Corp.*, 383 A.2d 278 (Del. 1977), while decided under state law, illustrates this problem. In *Lynch*, a controlling shareholder made a tender offer for shares of the minority. The court held that the controlling shareholder breached its fiduciary duty because it failed to disclose two pieces of material information in its offering circular: an appraisal suggesting that the firm's assets were worth more than the amount stated in the circular and that it was willing to pay a higher price for shares in the open market than the tender price. If this information were truly material, the price of the firm's shares should have risen at the time of disclosure. In fact, however, the price fell, demonstrating that no material information was withheld. For a more detailed critique of *Lynch*, see Fischel, *The "Race to the Bottom" Revisited: Reflections on Recent Developments in Delaware's Corporation Law*, 76 Nw. U.L. Rev. 913 (1982).

19. See Fischel, *supra* note 12, at 720-721 for an argument that it is more difficult to mislead investors than is commonly assumed. The difficulty of misleading investors is illustrated by studies concluding that accounting changes affecting the manner in which profitability is reported but not affecting real earnings do not cause investors to reevaluate the prospects of the firm. Hong, Kaplan & Mandelker, *Pooling vs. Purchase: The Effects of Accounting for Mergers on Stock Prices*, 53 Acct. Rev. 31 (1978); Sunder, *Relationships Between Accounting Changes and Stock Prices: Problems of Measurement and Some Empirical Evidence*, 11 J. Acct. Research 138 (Supp. 1973).

Modern Finance Theory in Securities Fraud Cases • 7

information will not have affected the price of the underlying security but may nevertheless be deemed material under the traditional approach.

Consider the example, used in the introduction, of a chemical company that fails to disclose the costs of compliance with environmental regulations. Assume that the other firms in the industry accurately disclose their expected compliance costs. Most lawyers would view the first firm's failure to disclose under these circumstances as more culpable than if no other firm disclosed. The fact that other firms did disclose would be viewed as an indication that the information was important to investors; it would also suggest that the one firm that did not disclose did so intentionally, thus satisfying the scienter requirement.²⁰ The economist, however, might view the above facts quite differently, probably concluding that the fact of disclosure by other affected firms made it highly improbable that the market was misled by one firm's failure to disclose. Thus the economist would view the nondisclosure as immaterial.²¹

The primary advantage of the market model is that it recognizes that the question of what information is important to investors cannot be answered in the abstract. A firm's failure to disclose that it will have to spend \$1 billion for compliance with environmental regulations is not material if this information is available from other sources;²² a firm's projection of increased earnings of \$1 billion based on a new type of technology is not material if market analysts view the technology as worthless. Thus it is impossible to analyze the materiality issue on an a priori basis. The market model of the investment decision, by focusing on whether the alleged misrepresentation or disclosure caused the security to trade at an artificially high or low price, eliminates the arbitrariness in the determination of materiality.

B. Reliance

The requirement of reasonable reliance is a prerequisite for establishing injury and damage under the traditional model of the investment decision. Since all investors are presumed to base investment decisions on analysis of available information, lack of awareness of a particular piece of information is a bar to recovery.²³ Returning to the earlier example, an investor under the traditional model could not recover if he was unaware of the SEC filing that contained the allegedly misleading information concerning compliance costs.

In interpreting the reliance requirement, courts have distinguished between omissions and misrepresentations. A plaintiff need not establish reliance in

20. *Ernst & Ernst v. Hochfelder*, 425 U.S. 185 (1976).

21. The economist might, however, be concerned about a potential free rider problem if some firms bear a disproportionate share of the costs of disclosure.

22. *See Seaboard World Airlines v. Tiger Int'l*, 600 F.2d 355 (2d Cir. 1979) (holding that a statement was not material because some other party could have discovered the correct information).

23. *See, e.g., Vervaecke v. Chiles, Heider & Co.*, 578 F.2d 713 (8th Cir. 1978). *Cf. Huddleston v. Herman & MacLean*, 640 F.2d 534, 549 (5th Cir. 1981).

8 • The Business Lawyer; Vol. 38, November 1982

omission cases because of the difficulty of proving that conduct was influenced by a statement never made.²⁴ It is this difficulty of proof, rather than any conceptual difficulty with the requirement itself, that eliminates the need for proof of reliance in omissions cases. Because misrepresentations cases do not present comparable problems of proof, plaintiffs must prove reliance.

The market model does not distinguish between omissions cases and misrepresentations cases. The relative ease of proving reliance in the latter type of case is irrelevant. Because the rational course for investors is simply to accept (rely on) the market price, it is of no consequence whether a plaintiff can demonstrate that he relied upon a particular piece of information. If fraudulent conduct caused the market price to be artificially high or low, a plaintiff under the market model has been injured even if he was totally unaware of the challenged conduct.

C. Causation and Damages

Once a plaintiff establishes materiality and reliance, he still must prove, under the traditional model, that the alleged misrepresentation or nondisclosure caused him to suffer an economic loss and the amount of such loss. Proving the existence and amount of economic loss causally related to conduct by the defendant is difficult, particularly where economic loss suffered by a plaintiff, such as in the opening example, may be attributable to market-, industry-, or even firm-specific factors having nothing to do with the challenged conduct of the defendant.²⁵

Under the market model, causation and damages, like materiality and reliance, are subsumed under the general inquiry of whether the alleged fraudulent conduct affected the price of the security. Moreover, by focusing on the precise relationship between the challenged conduct and the market price of the security,²⁶ the market model diminishes the possibility of compensating plaintiffs for losses caused by general market movements.

24. *Affiliated Ute Citizens v. United States*, 406 U.S. 128 (1972). Courts have not completely abandoned the reliance requirement in omissions cases, but rather have established a rebuttable presumption of reliance. *See, e.g., Rifkin v. Crow*, 574 F.2d 256, 263 (5th Cir. 1978) ("this presumption of reliance is not conclusive").

25. Several courts have recognized the need to isolate the effect of the alleged fraudulent conduct on stock prices as opposed to price movements attributable to general market, industry-wide, or other firm-specific factors without specifying how this should be done. *See, e.g., Huddleston v. Herman & MacLean*, 640 F.2d 534, 556 (5th Cir. 1981); *Rolf v. Blyth, Eastman Dillon & Co.*, 570 F.2d 38, 49 (2d Cir. 1978); *Green v. Occidental Petroleum Corp.*, 541 F.2d 1335, 1341 (9th Cir. 1976) (Sneed, J., concurring). Isolating the effect of the alleged misconduct on the firm's stock price is required by the out-of-pocket measure of damages, the traditional method for computing damages in open market trading cases under rule 10b-5, which limits recovery to the difference between the price paid or received, and the "real" value of the security at the time of the purchase/sale. *In re LTV Securities Litigation*, 88 F.R.D. 134, 148-49 (N.D. Tex. 1980).

26. The methodology for isolating the effect of the alleged fraudulent conduct on the market price of a firm's securities is discussed *infra* at text accompanying notes 45-51. *See also* Note,

III. THE FRAUD ON THE MARKET THEORY AND THE MARKET MODEL OF THE INVESTMENT DECISION

The distinction between the traditional and the market model of the investment decision, and the implications of each for securities fraud cases, has been brought into focus by decisions in several cases adopting a fraud on the market theory in open-market trading cases under rule 10b-5.²⁷ Under the theory, a plaintiff need not prove reliance on particular misrepresentations or omissions under rule 10b-5. The theory and its implications are analyzed below.

A. The Fraud on the Market Theory

The fraud on the market theory has been utilized by plaintiffs in class actions against a company and its officials for misrepresenting or failing to disclose relevant information. These misrepresentations or omissions are alleged to have artificially affected the price of the firm's securities; the class consists of all purchasers and sellers during the time the price was inflated or depressed. Defendants, on the other hand, have claimed that the absence of reliance on the specific information alleged to have artificially affected the price is a bar to recovery. Thus defendants have argued that the class could not be certified because of the need for individualized proof of reliance.

The courts that have adopted a fraud on the market theory have held that the class could be certified because proof of subjective reliance on particular misrepresentations is unnecessary in open-market trading cases under rule 10b-5 where there has been deception affecting the price of a firm's securities. A purchaser in the open market, the courts have reasoned, may be unaware of a specific false representation or may not directly rely on it. But such purchaser "relies generally on the supposition that the market price is validly set and that no unsuspected manipulation has artificially inflated the price, and thus indirectly on the truth of the representations underlying the stock price—whether he is aware of it or not, the price he pays reflects material misrepresentations."²⁸ Unless rebutted, therefore, the reliance requirement is satisfied if the misrepresentation is material.²⁹

The premise that investors rely on market prices assumes that the market price reflects all publicly available information quickly and without bias. As the cases themselves have recognized, this central assumption of the fraud on

The Measure of Damages in Rule 10b-5 Cases Involving Actively Traded Securities, 26 Stan. L. Rev. 371 (1974).

27. See, e.g., *Blackie v. Barrack*, 524 F.2d 891 (9th Cir. 1975), cert. denied, 429 U.S. 816 (1976); *Mottoros v. Abrams*, [Current] Fed. Sec. L. Rep. (CCH) ¶ 98,376 (N.D. Ill. 1981); *In re LTV Securities Litigation*, 88 F.R.D. 134 (N.D. Tex. 1980). Cf. *Panzirer v. Wolf*, 663 F.2d 365 (2d Cir. 1981).

28. *Blackie v. Barrack*, *supra* note 27, at 906.

29. The presumption of reliance is discussed critically *infra* at text accompanying notes 32-34.

10 • The Business Lawyer; Vol. 38, November 1982

the market theory—the efficiency of stock prices—has been demonstrated by a multitude of studies.³⁰ Because the market is efficient, investors who rely on a market price that is artificially inflated or depressed by fraudulent conduct suffer an economic loss.

The cases adopting the fraud on the market theory are noteworthy because of their explicit recognition of the market model of the investment decision and the concept of efficient capital markets on which the model is based. Once the market model is understood, the courts' treatment of the reliance requirement in open-market transactions is straightforward. The purpose of the requirement in face-to-face transactions is to ensure that the plaintiffs who would not have acted differently if the true information were known cannot recover. The requirement guarantees, in other words, that information that does not affect a buyer's or seller's view of the merits of a transaction cannot form the basis of a cause of action. In organized markets, however, the market has already performed the function of distinguishing between unimportant and important information. Thus the market acts "as the unpaid agent of the investor, informing him that given all the information available to it, the value of the stock is worth the market price."³¹ Because the market acts in this capacity, there is no point in requiring investors to do what the market has done already. The only relevant inquiry is whether the market price is artificially high or low because the market has been somehow misled. If this is the case, then all investors who relied on the market in setting the price also have been misled.

B. The Presumption of Reliance

Courts adopting the fraud on the market theory have refused to dispense with the reliance requirement altogether; they have suggested that the theory only creates a presumption of reliance that can be rebutted. Thus courts have stated that the presumption could be rebutted if the defendant proved that despite the materiality of the misstatement, an insufficient number of traders

30. As one court has stated:

Recent economic studies tend to buttress empirically the central assumption of the fraud on the market theory—that the market price reflects all representations concerning the stock. Indeed, economists have now amassed sufficient empirical data to justify a present belief that widely followed securities of larger corporations are efficiently priced: the market price of stocks reflects all available public information—and hence necessarily, any material misrepresentations as well

... [T]ests of market efficiency show that stock prices adjusted quickly to public announcements concerning the company: the "collective action of a sufficient number of market participants buying or selling the stock causes a very rapid, if not virtually instantaneous, adjustment in price."

In re LTV Securities Litigation, 88 F.R.D. 134, 144 (N.D. Tex. 1980).

31. *Id.* at 143.

relied on it to inflate the price;³² that plaintiffs relied on matters extraneous to the market price in making an investment decision;³³ or that plaintiffs would have purchased the security even if they had known of the truthful information.³⁴

These statements reflect a conceptual confusion concerning the market model of the investment decision. It is a contradiction, for example, for a statement to be material yet not affect enough traders to influence the market price. The meaning of materiality under the market model is that there has been an effect on the market price. If there has been no such effect, it is more accurate to say that the plaintiff has not shown that there has been a fraud on the market and therefore is not entitled to recovery. It is also difficult to know what to make of the assertion that the presumption of reliance can be rebutted by proof that an investor made his own estimation of available information rather than simply accepting the market price when deciding whether to purchase/sell. Such an investor could only decide that particular information was relevant by reference to the existing market price and the predicted impact of available information on future prices. If the market price is distorted by fraudulent conduct, both active and passive investors suffer injuries. Finally, the possibility that an investor would have purchased the security in any event should not defeat recovery. By definition, investors would have paid or received a different price had there been no fraud on the market. Investors would not be willing or have to pay the increment attributable to distortion of the price if the true information were known. Thus these investors suffer a real economic injury if there has been a fraud on the market. The concept of a presumption of reliance, therefore, is best abandoned. The logic of the fraud on the market theory dictates that the reliance requirement as conventionally interpreted be discarded altogether.

C. The Fraud in Bringing Securities to the Market Theory

The fraud on the market theory has not been adopted by all courts. In *Shores v. Sklar*,³⁵ a deeply divided Fifth Circuit, sitting en banc, held that a purchaser of bonds that were marketed pursuant to an allegedly misleading offering circular could recover only if he could prove that the bonds were not entitled to be marketed. Because the plaintiff admitted that he did not read the offering circular, the Fifth Circuit held that the reliance requirement precluded any recovery on a straight misrepresentation theory. Thus plaintiff could not recover even if he demonstrated that the bonds would have sold for a lower price or at a higher rate. It was unnecessary, according to the court, for plaintiff to have read the offering circular to prevail on his alternative theory

32. *Blackie v. Barrack*, *supra* note 27, at 906.

33. *In re LTV Securities Litigation*, *supra* note 30.

34. *Mottoros v. Abrams*, [Current] Fed. Sec. L. Rep. (CCH) ¶ 98,376 (N.D. Ill. 1981).

35. 647 F.2d 462 (5th Cir. 1981) (en banc). The vote was 12-10.

12 • The Business Lawyer; Vol. 38, November 1982

because he could justifiably assume that the bonds were entitled to be in the marketplace.

The Fifth Circuit's distinction between the purchase of bonds at an artificially high price and the purchase of bonds that are not entitled to be marketed is elusive at best. Virtually all securities will sell for some positive price. Thus the concept of whether securities are entitled to be marketed is meaningless when considered in isolation from price.³⁶ All a plaintiff can show is that a security would have sold for a different price had the true information been known at the time of sale. If the plaintiff can demonstrate this, he has proven that the securities were not entitled to be marketed at the selling price, and that all purchasers suffered an injury. The Fifth Circuit's requirement that these purchasers, because they did not read the offering circular, cannot recover unless they demonstrate that the securities could not be marketed under any circumstances represents a rejection of the market model of the investment decision that should not be followed by other courts.

IV. THE IMPLICATIONS OF THE FRAUD ON THE MARKET THEORY FOR SECURITIES FRAUD CASES UNDER RULE 10b-5

The fraud on the market theory has so far been invoked by plaintiffs to avoid the necessity of individualized proof of reliance in class action suits. In this section I explore the broader implications of the theory and propose that the issues of existence and extent of injury in securities fraud cases should be analyzed empirically by testing the effect of an alleged misrepresentation or nondisclosure on the market price of the firm's securities; I then address possible objections to this approach.

A. Effect on Market Price as the Only Relevant Inquiry

The fraud on the market theory can be viewed as a procedural device that favors plaintiffs because it allows a class to be certified by shifting the burden of proof on the reliance issue. But the theory has far more dramatic implications. By emphasizing the role of markets in transmitting information and the irrelevance of investors' awareness of specific pieces of information, the theory adopts the market model of the investment decision.

Under the market model, investors who accept the market price receive all relevant information and are thus fully protected. They are unprotected only if the market price has been distorted by the dissemination of false information. But the converse also is true. If plaintiffs suffer an injury when there has been a fraud on the market, regardless of whether they are aware of the alleged fraudulent conduct, because they have relied on the accuracy of the market price, it also follows that they have not suffered an injury when the market price has not been artificially inflated—when there has been no fraud

36. The dissent in *Shores* rejected the fraud on the entire market theory, but agreed with the majority that plaintiff's absence of reliance was a bar to recovery.

on the market. In this event, investors who rely on the accuracy of the market price get exactly what they bargain for. Returning to the initial example, no investor in the chemical company that did not disclose its compliance costs suffered an injury if the existence of these costs was well known. The market price of its securities reflected and communicated this information, and investors who accepted this price were protected.

Acceptance of the logic of the fraud on the market theory, therefore, leads to the conclusion that there is no need in a securities fraud case for separate inquiries into materiality, reliance, causation, and damages. These inquiries are necessary in a face-to-face transaction where each party must make a subjective valuation of information provided by the other party, but irrelevant in open market transactions where the market price transmits all relevant information. The relevant inquiry in open-market transactions should be whether the market price was in fact artificially affected by false information.

B. Possible Arguments Against the Effect on the Market Price Approach

1. ENCOURAGING UNINFORMED INVESTORS

One argument that can be made against the effect on market price approach is that it creates an incentive for investors to remain uninformed.³⁷ The whole purpose of the securities laws, the argument runs, is to provide information to investors so that they can make meaningful investment decisions. Investors who do not analyze available information and suffer a loss have only themselves to blame. Thus the reliance requirement promotes the objectives of the securities laws by denying recovery to investors who have not availed themselves of the useful information disseminated for their benefit.

The argument, like the traditional model of the investment decision, reflects a lack of understanding of the operation of markets in transmitting information. It assumes that investors can make better investment decisions by first carefully analyzing disclosures mandated by the federal securities laws. This assumption, however, is contradicted by available theoretical and empirical evidence. Studies that have tested empirically the information content of SEC filings have generally concluded that they contain no new information.³⁸ Even if such filings did contain new information, market professionals would have a comparative advantage in analyzing the information more quickly and efficiently. The rational course for the public investor, therefore, is simply to accept the market price as given. Rather than encouraging more informed investors, a legal rule that required investors to invest in the collection and

37. This argument was made in *Shores v. Sklar*, 647 F.2d 462, 483 (5th Cir. 1981) (dissenting opinion).

38. See, e.g., Madden, *Potential Corporate Takeovers and Market Efficiency*, 4 *Not. 36 J. Fin.* 1191 (1981); Beaver, *The Information Content of Annual Earnings Announcements*, 31 *Acct. Research* 67 (Supp. 1968).

14 • The Business Lawyer; Vol. 38, November 1982

analysis of information would force them to incur costs with no corresponding benefit.

2. CREATION OF A LESS EFFICIENT MARKET

A related but somewhat more sophisticated argument is that if all investors decided to accept the market price knowing that they could recover if the price was distorted by fraudulent conduct, the market would become inefficient and no longer effectively communicate all available information. If the market did become inefficient, the whole premise of the market model of investment would no longer be valid.

There is no reason to believe, however, that the effect on the market price approach will in any way undermine market efficiency. Market professionals have an incentive to invest in information processing up to the point where a dollar spent will equal a dollar gained from making superior predictions about the future. Only a tiny fraction of cases where the current market price is perceived to be above or below a future price will involve conduct that is actionable under the securities laws.³⁹ Market professionals retain the full ability to reap gains if they have superior insight about the future. In any event, the problem is entirely self-correcting. If there are inadequate resources being devoted to information processing causing the market to be inefficient, there is a potential for entrepreneurial gain. Investors, perceiving the divergence between price and value, can secure substantial gains by purchasing underpriced shares and selling overpriced shares. This process of arbitrage would eliminate any divergences that did exist and cause the market to return to equilibrium.

3. UNFAIRNESS TO INVESTORS WHO RELIED ON FACTORS OTHER THAN THE MARKET PRICE AND EXPECTED HIGHER RETURNS

Suppose that an investor, after reading a false statement, believes that a particular investment offers a superior rate of return and invests accordingly. The market, however, ignores the false statement so that it has no effect on the market price. Is the investor who relied on the false statement entitled to expectation or benefit-of-the-bargain damages—the higher rate of return that he anticipated?

Certain cases have awarded expectation damages in certain narrow situations where the amount is not speculative but reasonably certain, such as where a plaintiff was induced to invest based on assurances of receipt of a particular price.⁴⁰ If there has been no fraud on the market, however, investors have not been induced to invest by any fraudulent conduct of the defendant. The law

39. Only cases where the allegedly false statements are made with scienter will be actionable under the federal securities laws.

40. For a discussion of the general rule denying the availability of expectation damages in securities cases, and the limited exceptions to the rule, see *Osofsky v. Zipf*, 645 F.2d 107 (2d Cir. 1981).

has never compensated for injury where the so-called reasonable man—in this case the market—has not been misled.⁴¹ Such investors earned the market rate of return and are entitled to no more. Whatever the availability of expectation damages in other contexts, therefore, they should not be available when there has been no fraud on the market.

4. UNFAIRNESS TO INVESTORS WHO SUFFER LOSSES UNRELATED TO THE ALLEGED WRONGFUL CONDUCT

A related situation is presented if an investor relies on a statement that does not affect the market price and suffers a loss for reasons wholly unrelated to the alleged wrongful conduct. If an investor invests in a firm because he believes earnings have increased, when in fact the firm has simply changed its accounting technique of reporting income, should he be allowed to recover if the price of the firm's stock falls due to an industrywide slump?

Under established case law, the investor in such a case should not be entitled to any recovery.⁴² A plaintiff must establish more than that a loss would not have occurred but for the defendant's actions; the plaintiff also must establish a causal connection between the challenged conduct and the loss.⁴³ In the above example, this causal connection is absent by definition since the market price was not affected. Requiring the defendant to compensate the plaintiff in this situation would make the defendant an insurer of the market risk that exists independently of its own actions, and which would have existed even if no misstatement had been made. The securities laws are designed to prevent loss from fraud, not from economic downturn.

5. INCONSISTENCY WITH RECENT SUPREME COURT DECISIONS INTERPRETING RULE 10b-5

The Supreme Court in recent years has adopted a restrictive approach to the scope of rule 10b-5.⁴⁴ It could be argued that certain aspects of the effect on the market price approach, such as the elimination of the traditional reliance requirement, are inconsistent with this trend.

41. The reasonable man concept is pervasive in the law of contracts, torts, and criminal law, as well as in securities litigation. It would simply be too costly to develop separate standards of conduct for every individual.

42. See, e.g., *Huddleston v. Herman & MacLean*, 640 F.2d 534 (5th Cir. 1981); *Bonime v. Doyle*, 416 F. Supp. 1372 (S.D.N.Y. 1976).

43. Thus courts have distinguished two different types of causation. The first is transaction causation, which deals with whether the defendant's behavior caused the plaintiff to enter into a particular transaction. The second is loss causation, which focuses on whether the alleged fraudulent conduct was directly responsible for the injury. *Schlick v. Penn-Dixie Cement Corp.*, 507 F.2d 374 (2d Cir. 1974). The Fifth Circuit has recently emphasized the importance of establishing both types of causation. See *Huddleston*, 640 F.2d at 549.

44. See, e.g., *Santa Fe Indus. v. Green*, 430 U.S. 462 (1977); *Ernst & Ernst v. Hochfelder*, 425 U.S. 185 (1976); *Blue Chip Stamps v. Manor Drug Stores*, 421 U.S. 723 (1975).

16 • The Business Lawyer; Vol. 38, November 1982

While the fraud on the market theory has been used to support plaintiff cases, the implications of the theory have no such bias. One of the implications of the notion of efficient markets is that the investment community is not easily fooled. Use of biased accounting techniques or the issuance of overly optimistic forecasts are not likely to fool investors. If these techniques do not fool investors, then plaintiffs who may have had a successful cause of action under the traditional approach will have no success under the market model because there will have been no effect on the price. The proposed approach therefore, will likely decrease the number of successful rule 10b-5 suits.

Moreover, resources spent on securities fraud litigation will be reduced. Because the focal issue of every case will be whether there has been any effect on the market price of the firm's securities, the increased certainty resulting from this objective determination will reduce the amount of litigation. On those occasions when litigation is brought, there will no longer be any need for fact-finding on such issues as what a reasonable investor would have thought important or whether investors were aware of a certain document. In all probability, therefore, the effect on the market price approach will decrease the overall amount of litigation under rule 10b-5.

6. INCONSISTENCY WITH OPTIMAL DETERRENCE

A final possible, indeed formidable, objection with the proposed approach particularly the abandonment of the reliance requirement, is that it may be inconsistent with optimal deterrence. A damage remedy should reflect the social costs of a particular activity. Because trading losses of one group of traders are recouped by trading gains of another group of traders, the argument could be made that allowing the losing traders to recover their losses is an inappropriate damage measure because it exceeds the social costs of the challenged conduct. The appropriate damage remedy, the argument runs, is limited to forcing the wrongdoer to disgorge his gains. The proposed approach may be viewed as objectionable because it has the effect of increasing the number of potential plaintiffs seeking to recover trading losses.

Several responses are in order. First, the social costs of fraudulent conduct are substantial. The most obvious illustration is fraudulent conduct in connection with the sale of new securities. In this situation, the mispricing of securities will have a direct allocative effect because investment dollars will be directed away from more valuable uses. This will be true even in the secondary market as price signals from mispriced securities cause investment dollars to be misdirected. Moreover, a rule precluding traders from recovering trading losses will lead to an increase in investment in resources to distinguish correct from incorrect information, and this too is a social cost. Also, in many securities fraud cases the gains to defendants will be very difficult, if not impossible, to measure, making this an unreliable measure of damages. Finally, as emphasized above, it is not at all clear that the proposed approach

will increase damage awards because of the likelihood that use of the market model will decrease the number of successful 10b-5 suits.

In the final analysis, perhaps the most that can be said is that the choice between disgorging of gains and recovery of trading profits is a difficult one that has never been analyzed and which merits rigorous analysis. But even if disgorgement of gains is the correct measure of damages in securities fraud cases (an issue I plan to address in an article I am cowriting), it in no way follows that the reliance requirement, or other aspects of the conventional approach, should be retained. Effect on the market price would still displace inquiries into materiality, reliance, and causation, but recovery would be limited to a pro rata share of gains of the defendant.

V. DETERMINING THE EFFECT OF ALLEGED FRAUDULENT CONDUCT ON MARKET PRICE

Determining whether an alleged misrepresentation or omission caused a firm's stock to trade at an artificially high or low price presents problems, one of which is calculating what the price of the security would have been had the alleged wrongful conduct never occurred. The market price of the security on the date of purchase or sale is unreliable for this purpose because of the possibility that it has been affected as a result of the alleged fraudulent conduct. Attempting to appraise the value of the security by analyzing asset value, earnings data, and other information is inherently speculative. Measuring the difference in the market value of the security between the date of purchase and the date of sale (or any other posttransaction date) also is flawed because of the possibility that the decline was caused by factors other than the alleged wrongdoing by the defendant. Because any decline in value might be attributable to factors that affect the entire market, the relevant industry, or the firm itself, but have nothing to do with the alleged fraud, measuring damages by the difference between the purchase and sale prices may significantly inflate the plaintiff's losses attributable to conduct of the defendant.

These methodological difficulties can be overcome by using the standard market model developed by financial economists to measure the effect of unanticipated events on the market price of a firm's securities.⁴⁵ The market model makes it possible to test whether false information caused a security to trade at an artificially high or low price by measuring whether investors earned any abnormal returns at the time the correct information was released to the public.

45. The model has been used extensively to measure the effect of such events as stock splits, dividends, mergers, and earnings announcements on stock prices. See Schwert, *Using Financial Data to Measure Effects of Regulation*, 24 J. Law & Econ. 121 (1981). It has been suggested the model be used to calculate damages in securities fraud cases. Note, *The Measure of Damages in Rule 10b-5 Cases Involving Actively Traded Securities*, 26 Stan. L. Rev. 371 (1974).

The model is based on the observable correlation between the return on a particular security⁴⁶ and the return on the entire market when viewed over time.⁴⁷ Once this historically observed correlation is determined, it is possible to predict what the return of a given security should be on a certain date given the return for the market as a whole. If the return for a security on the date that the supposedly correct information is disclosed to the public is consistent with the historically observable correlation with the return for the entire market, then investors earned normal returns. If, on the other hand, the actual return on the date when the supposedly correct information is disclosed is lower at a statistically significant level than what is predicted, then investors earned abnormally low returns. The advantage of this procedure is that the concept of what price change is normal or abnormal incorporates the observed relationship between the return on a particular stock and the market as a whole.⁴⁸ Thus, movements in price caused by marketwide influences are excluded in determining whether release of a particular piece of information affected the return earned by investors. Moreover, by comparing the predicted return with the actual return on the date of release of the supposedly correct information or immediately thereafter, the test attempts to isolate the change in the return earned by investors that is attributable solely to the allegedly withheld or false information.⁴⁹

46. The return on a particular stock includes changes in prices as well as dividends and other distributions.

47. More technically, the market model attempts to relate the rate of return on an individual stock to the rate of return on a diversified portfolio of stocks, as shown in the following equation:

$$r_i = a + b r_m + e$$

where r_i = the rate of return on the stock of company i ; r_m = the rate of return on a diversified portfolio of stocks; a and b are constants reflecting systematic and unsystematic risk; and e = the error of the regression (assumed to have a zero mean) and the return on the stock of company i not explained by movement in the market as a whole. For a fuller explanation of the market and related models for measuring the effect of exogenous events on stock prices, see Schwert, *supra* note 45, at 124-129. For an analysis of the usefulness of regression analysis as a tool in a variety of legal contexts, see Fisher, *Multiple Regressions in Legal Proceedings*, 80 Col. L. Rev. 702 (1980).

48. It also is useful to relate the return on a particular security to a portfolio of securities in the same industry by adding another variable in the market model equation. In this manner, the concept of a normal or abnormal price change also will incorporate the observed relationship between the return on a particular security and other comparable firms.

49. The test is based on the assumption that new information affecting a particular firm is quickly reflected in the price of the firm's stock. Numerous empirical studies have confirmed the assumption of rapid price adjustment. See Aharony & Swary, *Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis*, 35 J. Fin. 1 (1980); Hillmer & Yu, *The Market Speed of Adjustment of New Information*, 7 J. Fin. Econ. 321 (1979); Dann, Mayers & Raab, *Trading Rules, Large Blocks and the Speed of Price Adjustment*, 4 J. Fin. Econ. 3 (1977). All of these studies found that new information is capitalized in stock prices no later than the day of release.

If the adjustment in price were not extremely rapid, sophisticated investors could consistently earn superior returns by buying and selling shares during the lag between the availability of information and the adjustment in price. Studies of the investment performance of professionally

Modern Finance Theory in Securities Fraud Cases • 19

This standard market model provides a relatively precise method for measuring whether an alleged omission or misrepresentation injured investors. Assuming that a lawsuit were brought under the facts of the initial example, the first step would be to establish, by analyzing past stock price data (including dividends and other distributions), the historically observable relationship between the return on the chemical company's stock, and the return on a portfolio of chemical company stocks and the market as a whole. It would then be possible to predict what the normal range of returns for the chemical company should be on any given day by observing the actual return on a portfolio of chemical stocks and the market as a whole on that date. By comparing this predicted return with the actual return immediately after disclosure in 1978 of the correct information, a conclusion could be reached about the effect of the alleged failure to disclose the costs of compliance with environmental regulations. If the difference between the actual return and the predicted return is not statistically significant, investors were not injured by the chemical company's failure to disclose its expected costs of compliance because this information was already incorporated in the market price.⁵⁰ If, on the other hand, investors earned significantly below the predicted return immediately after disclosure of the correct information was made, the increased costs of compliance were not anticipated by the market and therefore were not incorporated in the market price.

It should be emphasized, however, that the existence of abnormal returns does not necessarily mean that the firm intentionally disseminated false information or withheld relevant information. The abnormal returns may simply be caused by new information not previously available. In the initial example, the firm may have been unaware that its expected costs of compliance would be so high at the time of the initial filing. Alternatively, information may have been too indefinite to disclose or there may have been sound business reasons for not disclosing. Any abnormal returns in these cases would be attributable to a revised estimate of the profitability of the firm because of new information rather than the intentional dissemination of false information or the withholding of relevant information. In any of these situations, plaintiff should not be entitled to recover.

VI. CONCLUSION

The traditional method for determining the existence and amount of injury in open-market trading cases under rule 10b-5 should be replaced by a test measuring whether the alleged nondisclosure or misrepresentation affected the market price of the firm's securities. The fraud on the market theory goes

managed portfolios, however, have generally concluded that professional investors do not outperform the market. For a summary of these studies, see B. Lev, *Financial Statement Analysis: A New Approach*, 220-21 (1974); J. Lorie & M. Hamilton, *supra* note 9, at 87-97.

50. This statement assumes that there has been no leakage of information concerning compliance costs between the time of the two SEC filings.

20 • The Business Lawyer; Vol. 38, November 1982

far in this direction. Future cases should adopt the logic of the fraud on the market theory and utilize the tools of financial economics in adjudicating securities fraud cases.